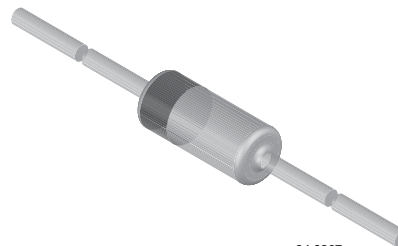


## Small Signal Switching Diodes, High Voltage

### Features

- Silicon Epitaxial Planar Diodes
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



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### Applications

- General purposes

### Mechanical Data

**Case:** DO35 Glass case

**Weight:** approx. 125 mg

**Cathode Band Color:** black

**Packaging Codes/Options:**

TR/10 k per 13" reel (52 mm tape), 50 k/box

TAP/10 k per Ammopack (52 mm tape), 50 k/box

### Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
BAV17	$V_{RRM} = 25\text{ V}$	BAV17-TR or BAV17-TAP	BAV17	Tape and Reel/Ammopack
BAV18	$V_{RRM} = 60\text{ V}$	BAV18-TR or BAV18-TAP	BAV18	Tape and Reel/Ammopack
BAV19	$V_{RRM} = 120\text{ V}$	BAV19-TR or BAV19-TAP	BAV19	Tape and Reel/Ammopack
BAV20	$V_{RRM} = 200\text{ V}$	BAV20-TR or BAV20-TAP	BAV20	Tape and Reel/Ammopack
BAV21	$V_{RRM} = 250\text{ V}$	BAV21-TR or BAV21-TAP	BAV21	Tape and Reel/Ammopack

### Absolute Maximum Ratings

$T_{amb} = 25\text{ °C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Peak reverse voltage		BAV17	$V_{RRM}$	25	V
		BAV18	$V_{RRM}$	60	V
		BAV19	$V_{RRM}$	120	V
		BAV20	$V_{RRM}$	200	V
		BAV21	$V_{RRM}$	250	V
Reverse voltage		BAV17	$V_R$	20	V
		BAV18	$V_R$	50	V
		BAV19	$V_R$	100	V
		BAV20	$V_R$	150	V
		BAV21	$V_R$	200	V
Forward continuous current			$I_F$	250	mA
Peak forward surge current	$t_p = 1\text{ s}, T_j = 25\text{ °C}$		$I_{FSM}$	1	A
Forward peak current	$f = 50\text{ Hz}$		$I_{FRM}$	625	mA
Power dissipation			$P_{tot}$	500	mW

**Thermal Characteristics**
 $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	$l = 4\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	300	K/W
Junction temperature		$T_j$	175	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 175	$^{\circ}\text{C}$

**Electrical Characteristics**
 $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1000	mV
Reverse current	$V_R = 20\text{ V}$	BAV17	$I_R$			100	nA
	$V_R = 50\text{ V}$	BAV18	$I_R$			100	nA
	$V_R = 100\text{ V}$	BAV19	$I_R$			100	nA
	$V_R = 150\text{ V}$	BAV20	$I_R$			100	nA
	$V_R = 200\text{ V}$	BAV21	$I_R$			100	nA
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 20\text{ V}$	BAV17	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 50\text{ V}$	BAV18	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 100\text{ V}$	BAV19	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 150\text{ V}$	BAV20	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 200\text{ V}$	BAV21	$I_R$			15	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BAV17	$V_{(BR)}$	25			V
		BAV18	$V_{(BR)}$	60			V
		BAV19	$V_{(BR)}$	120			V
		BAV20	$V_{(BR)}$	200			V
		BAV21	$V_{(BR)}$	250			V
Diode capacitance	$V_R = 0$ , $f = 1\text{ MHz}$		$C_D$		1.5		pF
Differential forward resistance	$I_F = 10\text{ mA}$		$r_f$		5		$\Omega$
Reverse recovery time	$I_F = I_R = 30\text{ mA}$ , $i_R = 3\text{ mA}$ , $R_L = 100\text{ }\Omega$		$t_{rr}$			50	ns

## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified

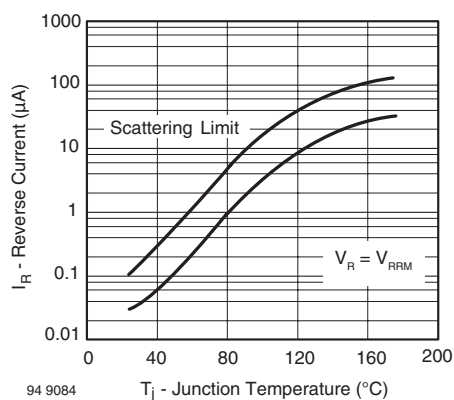


Figure 1. Reverse Current vs. Junction Temperature

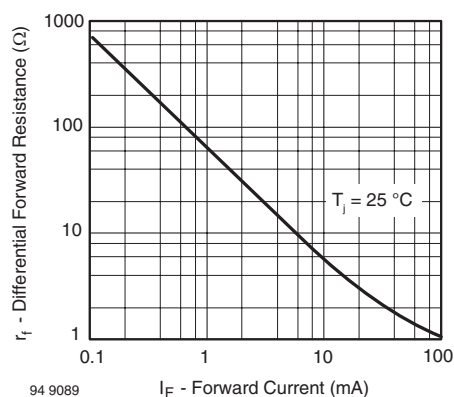


Figure 3. Differential Forward Resistance vs. Forward Current

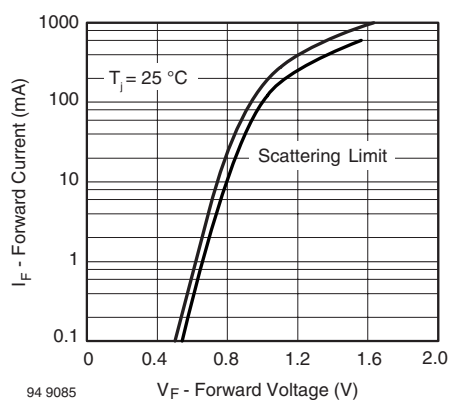
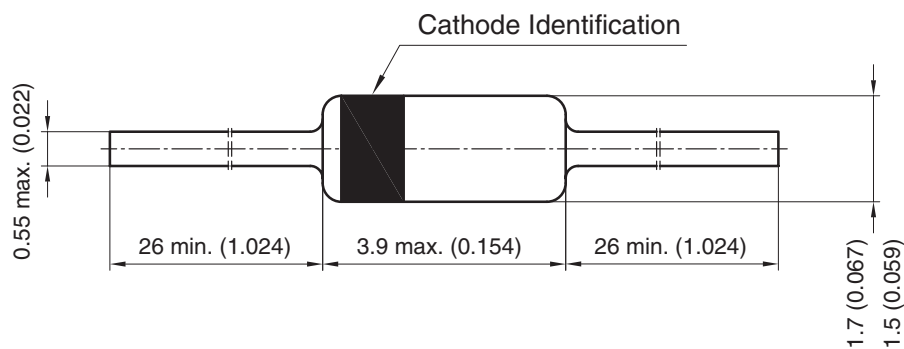


Figure 2. Forward Current vs. Forward Voltage

## Package Dimensions in millimeters (inches): DO35



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94 9366

### Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design  
and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



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